

## Arrays

### Objective

- The objective of this lab is to understand the concept of arrays. Developed an understanding of row-major and col-major ordering by implementation. This lab is also help to analyze the indexing mechanism in arrays.

### Task

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#### 1. Matrix Operations

##### Definition:

In mathematics, a **matrix** (plural **matrices**, or less commonly **matrixes**) is a rectangular array of numbers, such as

$$\begin{bmatrix} 1 & 2 & 3 \\ 6 & 5 & 4 \end{bmatrix}.$$

Entries of a matrix are often denoted by a variable with two subscripts, as shown on the right. Matrices of the same size can be added and subtracted entry wise and matrices of compatible size can be multiplied.

Basic Operations are matrix addition, matrix multiplication, and transpose.

### Procedure

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- Declare two-dimensional array of type integers.
- After getting both matrices then perform add and multiply operation. Use one matrix to find transpose of it.
- Result must be store in a new array.
- Get number of rows and columns by using the **array1.length**
- Create a class name as **MatrixMultiplication**. Class contain method such **MatrixAddition**, **MatrixMultplication**, and a **matrix transpose**. One more method is required to print the resultant matrix **showResult()**.